

# Charles Sanders Peirce

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Charles S. Peirce was born into advantageous circumstances on September 10, 1839 in Cambridge, Massachusetts, to Benjamin and Sarah Hunt (Mills) Peirce; but, on April 19, 1914, near Milford, Pennsylvania, he died in poverty and isolation. He graduated from Harvard College in 1859, the year in which Charles Darwin's *Origin of Species* was published. His father was one of the foremost mathematicians in the United States in the nineteenth century, enjoying a distinguished career as a professor at Harvard and a scientist with the US Coast and Geodetic Survey. Charles worked as a scientist with this agency for three decades, beginning in 1861. As a young man, he also held a position at the Harvard Observatory. During his lifetime, his only published book was *Photometric Researches* (1878), a scientific treatise growing out of his work in this area. Undeniably tragic in some respects, his life can hardly be counted a failure. His published writings "run to approximately twelve thousand pages," whereas we have eighty thousand pages of his unpublished manuscripts. The latter perhaps even more than the former provide unmistakable evidence that Charles Peirce was a philosophical genius. Though he tended to make a mess of his life (incurring foolish debts, alienating generous friends, and squandering exceptional opportunities), he made much of his genius and even more of his passion to find things out. Ernest Nagel's judgment is far from idiosyncratic: "Charles Sanders Peirce remains the most original, versatile, and comprehensive philosophical mind this country has yet produced" (cited in W 2:xi).

## Philosopher and Scientist

Peirce's philosophical contribution is of a piece with his scientific training: he not only came to philosophy from science but also pursued philosophical questions largely for the sake of articulating a normative theory of objective investigation. He did manifest an intrinsic interest in substantive philosophical questions, but methodological concerns were never far from his persistent attempts to address in a straightforward manner these substantive issues. Early in his career he gave a series of lectures on "The Logic of Science." His lifelong concern to disclose the logic of science resulted, in the end, in a transformation of his understanding of logic. He came to envision logic as a theory of inquiry.

Peirce refused to define philosophy in opposition to science in the modern sense. In order to understand his conception of philosophy, it is necessary to consider the place of philosophy in his classification of the sciences and also simply his view of science. He drew a sharp distinction between practical and theoretical investigation. Since many theoretical sciences have evolved out of practical pursuits, the arts are hardly irrelevant to an understanding of science, especially since Peirce stresses the importance of the history of the sciences for a comprehension of their nature (see *EP* 2:38). But *theoria* has transcended its origin, such that a large number of purely theoretical investigations have emerged in their own right. The vitality of these investigations crucially depends on pursuing them for their own sake, apart from any concern with what practical benefits might accrue to theoretical discoveries. Philosophical investigation was, in Peirce's judgment, a theoretical science, though one disfigured almost beyond recognition by too intimate an association with seminary-trained philosophers (*CP* 1.620, 6.3).

Taken together, Peirce classified the distinct branches of philosophical inquiry as one of the three broadest divisions of theoretical knowledge. He located philosophy between mathematics, the rubric under which he subsumed the most abstract branches of theoretical inquiry, and (using a term borrowed from Jeremy Bentham) idioscopy, the least abstract ones (e.g., physics, chemistry, biology, and psychology). He supposed, like all other sciences, the branches of philosophy drew upon mathematics for important principles and conceptions, not the least of these pertaining to relationships of an exceeding abstract character. He also supposed that less abstract sciences such as physics and psychology drew upon not only mathematics but also philosophy for some of their most basic principles and conceptions. In this threefold classification of theoretical science, he was indebted to Auguste Comte's principle of classification ("one science depends upon another for fundamental principles, but does not furnish such principles to that other" (*CP* 1.180)). A thoroughly naturalistic account of scientific intelligence, however, undergirds this formal classification of the theoretical sciences. Moreover, a historical sensitivity informed Peirce's numerous attempts to offer a detailed classification of our scientific pursuits.

## Scientific Intelligence and Theoretical Knowledge

Peirce took science to be "a living thing" (*CP* 1.234; cf. 1.232), preoccupied with "conjectures, which are either getting framed or getting tested" (*CP* 1.234). It is nothing less than a mode of life; more fully, "a mode of life whose single animating purpose is to find out the real truth, which pursues this purpose by a well-considered method, founded on thorough acquaintance with such scientific results already ascertained by others as may be available, and which seeks cooperation in the hope that the truth may be found" (*CP* 7.55).

Peirce stressed repeatedly that scientific inquiry is essentially a communal endeavor. Reliance on others is here a necessity. The appeal to the observations and assessments of others is constitutive of science, at least in Peirce's sense, a sense he took to be faithful to what the successful practices of experimental inquiry manifest about themselves in their actual development. Peirce's definition of reality (see SCIENTIFIC

REALISM, ANTIREALISM, AND EMPIRICISM) as what the community of inquirers *would* discover, given adequate resources and time, reflected his training as a scientist. His antipathy to much of modern philosophy was a reaction to the prevalent tendency of inquirers during this epoch to exhibit “an absurd disregard for other’s opinions” (W 2:313). His identification with modern science was of a piece with his commitment to communal inquiry.

The passionate pursuit of theoretical knowledge was, for Peirce, intrinsically worthwhile and intelligible. In one sense, he traced the origin of our knowledge to our instincts, in another, simply to the dynamic conjunction of human intelligence and cosmic intelligibility. He supposed, “all that science has done [far] is to study those relations . . . brought into prominence [by] . . . two instincts – the instinct of *feeding*, which brought with it elementary knowledge of mechanical forces, space, etc., and the instinct of *breeding*, which brought with it elementary knowledge of psychical motives, of time, etc.” (CP 1.118; cf. 5.591). In general, he was convinced that humans are able to divine something of the principles of nature because they have evolved as part of nature and, therefore, under the influence of these principles (CP 7.46). Humans partake of the world they know: the ways of the cosmos are not utterly foreign to the propensities of our minds, otherwise they would be forever unknown and we long since extinct (see, e.g., CP 7.38). “Our faculty of guessing,” Peirce contended, “corresponds to a bird’s musical and aeronautic powers; that is, it is to us, as those are to them, the loftiest of our merely instinctive powers” (CP 7.48) or inherited dispositions. Here is a robust affirmation of biological continuity without any reductive implications. For, whatever its origin, countless individuals throughout human history have been animated by, above all else, the pursuit of knowledge for its own sake. The intelligence of human beings and the intelligibility of their circumambient world are, in another sense, sufficient to explain why we inquire (CP 2.13). The lure of intelligibility proves to be irresistible to an intelligence disposed simply to wonder why, say, an event occurred or our expectations were contravened (CP 7.189). At least some humans conduct investigations simply to find out whatever truth might be discovered by a painstaking, persistent, and systematic inquiry. Aristotle was one such person, Peirce another.

It may not be oxymoronic to speak of instinctual intelligence, if only to facilitate a contrast with scientific intelligence. The ingenuity and, in a sense, intelligence with which bees, by means of instinctual complex movements, indicate the direction and distance of honey – or beavers by means of intricate actions construct a dam – are too obvious to deny. The dispositions by which these feats are performed appear to be largely innate or instinctual. At least something akin to intelligence appears to be operative in the accomplishment of such complex tasks, securing some obvious advantage.

Human intelligence is, however, predominantly scientific intelligence in its most rudimentary form; for it is “an intelligence capable of learning by experience” (CP 2.227). In accord with Peirce’s own principle of continuity, we should not suppose that there is an absolutely sharp dichotomy between instinctual and scientific (or experiential) intelligence, for (as we have already seen) our very capacity to learn from experience attests to the beneficial operation of instinctual tendencies. Scientific intelligence is rooted in our instinctual drives. Our capacity to learn from experience is

closely connected with our capacity to subject our conceptions, assertions, and inferences to criticism. Peirce proposed that “‘rational’ means self-criticizing, self-controlling and self-controlled, and therefore open to incessant question” (CP 7.77; cf. 5.440). In light of this definition, it is clear that *scientific* and *rational* intelligence, though apparently different in meaning, inescapably overlap in fact; for we can most effectively learn from experience only by an ongoing process of complex interrogation in which our suppositions, conceptions, claims, and conclusions are all subjected to self-criticism. Peirce was aware of “man’s stupendous power of shutting his eyes to plain facts” (1975–7, vol. 2, p. 99), but he was confident in the *force majeure* of human experience: “Experience may be defined as the sum of ideas [beliefs] which have been irresistibly borne in upon us, overwhelming all free-play of thought, by the tenor of our lives. The authority of experience consists in the fact that its power cannot be resisted; it is a flood against which nothing can stand” (CP 7.437; cf. 5.50).

The pursuit of theoretical knowledge entails the cultivation of scientific intelligence and, in turn, the cultivation of such intelligence is also the cultivation of instinctual intelligence in its distinctively human form (for what human instincts facilitate above all else is the acquisition of habits other than the ones with which we were born). Human rationality is, in the first instance, “an Unmatured Instinctive Mind.” As such, phylogeny is merely ancillary to ontogeny; the history of the species is, in effect, taken up into that of the individual and, as the inheritor also of vast cultural resources, the individual becomes a self-determining and, to some extent, even a self-defining agent (see, e.g., CP 5.533, 1.591). The instinctual mind of human beings requires a development beyond that of the evolutionary history in which it took shape and proved itself viable; the “prolonged childhood” of human beings proves as much, as does the “childlike character” of the instinctual mind itself. In humans and to some extent perhaps also in other species (ones especially adapted to learning from experience), “Instinct is a weak, uncertain Instinct.” This allows it to be “infinitely plastic”; and this underwrites alterability and hence the possibility of intellectual growth (growth in intelligence, the capacity to learn ever more effectively from experience). “Uncertain tendencies, unstable states of equilibrium are conditions *sine qua non* for the manifestation of Mind” (CP 7.381). The general disposition to acquire novel dispositions entails a plasticity itself entailing a susceptibility to disequilibria. Doubt is one name for the instability into which an agent is thrown when the dispositions of that agent prove ineffective in a given situation; for doubt is at bottom the arrest, or disruption, of a belief or habit.

## Philosophy Within the Limits of Experience Alone

Despite his indebtedness to Kant, Peirce did not make theoretical philosophy into an essentially critical discipline charged with the task of defining the intrinsic limits of human knowledge. Like Kant, he did insist that the limits of experience define the limits of knowledge (“all our knowledge is, and forever must be, relative to human experience and to the nature of the human mind” (CP 6.95)), but he conceived experience in such a way as to be capable of aiding us in discovering to some degree the way things are (not simply the way they appear to us). He refused to sever appearance

from reality, and also our experience of things from their status and properties apart from our experience. If we rigorously adhere to experience, not granting that things completely separable from our experience are even conceivable, we are forced to jettison Kant's concept of the thing-in-itself: "The *Ding an sich* . . . can neither be indicated nor found [in any *possible* experience]. Consequently no proposition can refer to it, and nothing true or false can be predicated of it. Therefore, all references to it must be thrown out as meaningless surplusage" (CP 5.525). Whereas Kant maintained that things in themselves are conceivable but unknowable (since we are able to think them without contradiction but not able to know them by recourse to any experience), Peirce argued they were incognizable, meaning that they are not even conceivable (see, e.g., CP 5.255). Given that "all our conceptions are obtained by abstractions and combinations of cognitions first occurring in judgments of experience" (CP 5.255; also W 2:208), their significance is totally bound up with the junction of such judgments.

Peirce held that the limits of experience define not only those of knowledge but also those of meaning itself: human beings are so completely hemmed in by the bounds of their possible practical experience, their minds are so restricted to being instruments of their needs and desires, they cannot in the least *mean* anything transcending those bounds (CP 5.536). Our experience of our selves and of even our most adequate theories attests to a cosmos far outstripping our comprehension: "The experience of ignorance, or of error, which we have, and which we gain by correcting our errors, or enlarging our knowledge, does enable us to experience and [thereby] conceive something which is independent of our own limited views" (CP 7.345). "Over against any cognition, there is an unknown but knowable reality; but over against all possible cognition, there is only the self-contradictory" (CP 5.527; also W 2:208). Peirce concluded that *being* and *cognizability* are synonymous (CP 5.257; also W 2:208): whatever else we might mean by being, we must mean that which in some manner and measure is, in principle, accessible to our minds via our experience. He went so far as to affirm, in the colloquial (not Kantian) sense: "we have *direct experience of things in themselves*. Nothing can be more completely false than that we can experience only our own ideas" (CP 6.95). However superficial, fragmentary, and even distorted is the knowledge based on such experience, it cannot be gainsaid: what we have experimentally derived from our encounters with reality warrants the title of knowledge.

Though emphatically a fallibilist, Peirce was hardly a skeptic. Indeed, he took his commitment to the doctrine of fallibilism (namely, "the doctrine that our knowledge is never absolute but always swims . . . in a continuum of uncertainty and of indeterminacy" (CP 1.171)) to be inseparable from his faith in the reality of knowledge. He stressed, "only a deep sense that one is miserably ignorant . . . can spur one on in the toilsome path of learning" (CP 5.583). Further, he claimed, "no blight can so surely arrest all intellectual growth as the blight of cocksureness" (CP 1.13). Yet Peirce had at once a "high faith" in knowledge *and* an acute sense of fallibility. He took our knowledge to be nothing more than a fabric of conjectures, based on a patchwork of experience, but he insisted that even in this form it is highly valuable. He took the pursuit of knowledge, in his own case at least, to be nothing less than an act of worship (CP 8.136 n.3).

Peirce's philosophical interests were both methodological and substantive; they were shaped by his scientific training and work. He reported: "I came to philosophy not for

its teaching about God, Freedom, and Immortality, but intensely curious about Cosmology and Psychology" (CP 4.2). His curiosity about the cosmos tended to outstrip that about the psyche, though he did outline a theory of consciousness, mind, and self. Peirce went so far as to describe his philosophy as "the attempt of a physicist to make such conjecture as to the constitution of the universe as the methods of science may permit, with the aid of all that has been done by previous philosophers" (CP 1.7).

He worked tirelessly to transform philosophy into such a scientific inquiry and, hence, a communal undertaking, insisting: "We individually cannot reasonably hope to attain the ultimate philosophy which we pursue; we can only seek it, therefore, for the *community* of philosophers" (CP 5.265). In a letter to William James (see JAMES), he proclaimed, "philosophy is either a science or is balderdash" (Perry 1935, vol. 2, p. 438). The task of the philosopher is to join all those who are devoted to discovering whatever truth about the world might be derived from our experience of the world. In this endeavor, philosophers are distinguished from other scientists by relying solely on ordinary experience. The field of their observations does not require instruments such as telescopes or microscopes, travel to faraway places, or even much special training, but is that provided by the everyday encounters with environing affairs to virtually every normal person during every waking hour of that person's life.

Peirce supposed: "We naturally make all our distinctions too absolute" (CP 7.438). The tendency to sunder humans from other animals (CP 5.534), self from other (CP 7.571), mind from matter, the conscious regions of mind from its unconscious depths, perception from abduction (the process by which hypotheses are generated), and appearance from reality would be examples of this tendency. In opposition to the marked dualistic tendency so prominent in traditional Western philosophy, Peirce championed *synechism* (see NOT CYNICISM, BUT SYNECHISM: LESSONS FROM CLASSICAL PRAGMATISM), a doctrine disposing him to search for the respects in which things are continuous (see, e.g., CP 6.169). In an insightful and suggestive study, Parker (1998) argues that the principle of continuity is itself the thread by which Peirce wove together apparently disparate doctrines into a coherent system. Though Peirce accorded (under the rubric of secondness) great importance to opposition, otherness, disruption, and a host of allied phenomena, he stressed (as instances of thirdness) continuity, mediation, intelligibility, and other kindred phenomena. His doctrine of the categories of firstness, secondness, and thirdness was crafted as a way of dealing with any imaginable reality. The category of firstness highlighted the qualitative immediacy characteristic of anything whatsoever (what anything is, *in itself*, apart from all else), while that of secondness underscored brute opposition, irreducible alterity, and that of thirdness the network of *connections* in and through which any reality acquires its defining properties. Hence, his doctrine of synechism was of a piece with his emphasis on thirdness.

For an understanding of Peirce's conception of philosophy, we must appreciate his insistence on appearance being intrinsically connected to reality: the way things appear, including the way they manifest themselves in ordinary experience, is indicative of the way things are; in turn, the reality of anything to which we can meaningfully refer is such that it possesses the capacity, in some circumstances however remote or rare, to disclose itself (cf. CP 5.313). The reality with which philosophy deals is nothing more recondite than the readily accessible objects and events of our direct

experience. (Even so, these objects and events might provide evidence for “One Incomprehensible but Personal God” (CP 5.496).) The manner in which philosophy investigates these objects and events is nothing other than that of painstaking observation, conceptual generalization, and controlled conjecture. For Peirce, this obviously meant that philosophy must abandon the pretension of being able to attain demonstrative knowledge of transcendent reality (“The demonstrations of the metaphysicians are all moonshine” (CP 1.7)), contenting itself rather with conjectural knowledge of the empirical world.

This also meant strict adherence to technical terms: “if philosophy is ever to stand in the ranks of the sciences, literary elegance must be sacrificed – like the soldier’s old brilliant uniforms – to the stern requirements of efficiency” and, thus, the philosopher must be required “to coin new terms to express such new scientific conceptions as he may discover, just as his chemical and biological brethren are expected to do” (CP 5.13). Of course, ordinary language is of immense importance to the philosophical investigator. Peirce stressed, “a language is a thing to be revered; and I protest that a man who does not reverence a given language is not in the proper frame of mind to undertake its improvements” (MS 279). Moreover, the “case of philosophy is peculiar in that it has positive need of popular words in their popular senses – not as its own language (as it has too usually used those words), but as objects of its study” (EP 2:264–5; cf. 8.112). Painstaking attention to ordinary usage is, thus, an important part of philosophical investigation (see, however, CP 2.67, 2.70, and 2.211). But it is important mainly insofar as it facilitates a critical appeal to *everyday* experience. The appeal to ordinary usage is, for Peirce, bound up with an appeal to everyday experience; and the appeal to such experience provides the guidance requisite for carrying forward the work of philosophy.

Herein lies its main difference from such special sciences as physics, chemistry, and biology. In contrast to such special (or idioscopic) sciences, the distinct branches of philosophical inquiry are *caenosopic*. For philosophy “contents itself with so much of experience as pours in upon every man during every hour of his waking life” (CP 5.13 n.1; cf. 1.241). “Experience,” Peirce asserted, “may be defined as the sum of ideas [beliefs] which have been irresistibly borne in upon us, overwhelming all free-play of thought, by the tenor of our lives. The authority of experience consists in the fact that its power cannot be resisted; it is a flood against which nothing can stand” (CP 7.437; cf. 5.50).

Since the observations afforded by such experience are common to virtually all humans, without the benefit of special training or instruments, Peirce appropriated Jeremy Bentham’s term *caenosopic* to designate the disciplines contenting themselves with such observations. He was aware that he was using *experience* “in a much broader sense than it carries in the special sciences”; for in them it is set in contrast to interpretation, whereas for philosophy “experience can only mean the total cognitive result of living, and includes interpretations quite as truly as matters of sense” (CP 7.538). In other contexts, he acknowledges that what counts in science as observation cannot be severed from ratiocination and, thus, presumably from interpretation (see, e.g., CP 1.34–5). Even so, the experience to which we appeal in philosophy is not the observations consequent upon controlled circumstances or obtainable solely by special means; it is, rather, what the course of life forces upon us willy-nilly (CP 7.391, 1.426).

## The Conduct of Inquiry

Armed with an interior understanding of scientific inquiry, Peirce offered a normative account of objective investigation. His pragmatism was central to this account. It grew out of conversations in the Metaphysical Club (an informal group involving Chauncey Wright, Oliver Wendell Holmes, Jr., William James, and a handful of others) and was formulated, though not named as such, in "How to Make Our Ideas Clear" (1878). He originally conceived this essay as part of a series entitled "Illustrations of the Logic of Science" though eventually envisioned it as part of his 1893 "Search for a Method." Despite his deep, multifaceted opposition to Descartes (see PEIRCE AND CARTESIAN RATIONALISM), the full title to one of his predecessor's main works can be borrowed to identify an overarching goal of Peirce's philosophical project: Discourse on the method for rightly conducting one's reason and for seeking truth in the sciences. "The Fixation of Belief" and "How to Make Our Ideas Clear" are important articulations of Peirce's discourse on method, even though he came to be critical of some aspects of these essays. In the former, he defines the method of science in contrast to three other ways of fixing belief; in the latter, he enunciates a maxim by which anyone adhering to the method of science can render clearer the ideas (or signs) on which investigations turn.

A conception of intelligence underlies Peirce's pragmatism. He maintained, "one, at least, of the functions of intelligence is to adapt conduct to circumstances, so as to subserve desire" (CP 5.548). Of course, such adaptation might involve modification of circumstances; hence, it does not mean conformity to the world simply as it happens to be: adapting conduct to circumstances might mean altering them in accord with desire. The function of intelligence drives toward the recognition of facts and the discovery of laws, but with equal force it drives toward the modification of virtually whatever in the course of experience proves to be malleable. This includes intelligence itself. Peirce was convinced "intelligence does not consist in feeling in a certain way, but in acting in a certain way" (CP 6.286). Action must not be limited to physical exertions in the outward world of actuality but must be stretched to include inward actions, imagined endeavors taking place solely in the inward world of fancy (CP 6.286; cf. 5.496). Humans are far from the only animals exhibiting intelligence, though the crucial role of imaginary action and (closely allied to this) the effects of symbolization make of human intelligence something quite unique. Human intelligence is a biologically evolved function encompassing a vast array of instinctual tendencies, almost all of which bear upon action broadly conceived. Most of these tendencies are directed not to outward bodily motions but rather to inward imaginary actions, their "theatre" being "the plastic inner world" of human fancy (MS 318, 44). The products of these actions are symbols by which the scope of imagination is dramatically expanded. But "it is only out of symbols that a new symbol can grow, *Omne symbolum de simbolo*" (CP 2.302). Thus, the imaginary operations by which novel symbols are generated must already involve symbols or, at least, proto-symbols. The image serving as a sign of one's dead ancestor or as a sign of the distant place from which one has just returned qualifies to serve this role. By this means, the absent structures thought and informs action. Just as our intelligence is instinctively imaginative, so our imagination is irrepressibly symbolific.



The conduct of inquiry involves, for Peirce, the struggle to overcome doubt and, in the context of this struggle, the need to clarify the meanings of our terms.

Our intelligence is linked as intimately to action as to imagination. Peirce noted, “the greater part of intelligent actions are directed toward causing the cessation of some irritation” (CP 6.282). These irritations are often simply somatic (e.g., hunger). But an important type of irritation is, however, bound up with bodily dissatisfaction (see, e.g., CP 5.372), of a somewhat different character, for it directly concerns the arrest of intelligence. This type of irritation signals nothing less than the failure of intelligence; it goads the organism to regain its equilibrium, by acting (either outwardly or imaginatively) in such a way as to establish an effective response to this irritant and all analogous ones. This means establishing a *general* way of acting (in a word, a habit). Whatever else our beliefs might be, they are such habits of action. This is, indeed, mainly what they are. Doubt is, in its least eviscerated sense, hesitancy in action signaling the dissolution of belief. Whereas habits are states tending toward their own perpetuation, doubts are ones driving toward their own cessation (CP 5.372; also W 3:247). “The irritation of doubt causes a struggle to attain a state of belief” (CP 5.374; also W 3:247)), a struggle Peirce called *inquiry*.

Efforts to overcome doubt and attain a state of belief may take a variety of forms. By the method of tenacity, we cling tenaciously to any belief threatened by doubt, aggressively excluding from consideration any factor counting against this belief. This purely individual manner of fixing (or securing) belief, however, cannot sustain itself in practice; for the “social impulse is against it” (CP 5.378; also W 3:250). The testimony of others can have the power to convince a person he or she is insane (CP 5.233; also W 2:202), such is the strength of this impulse. Of more immediate relevance, Peirce claimed: “No matter how strong and well-rooted in habit any rational convictions of ours may be, we no sooner find that another equally well-informed person doubts it, than we begin to doubt it ourselves” (CP 2.160). The anger we so often feel toward those who induce us to doubt such convictions is a sign of our susceptibility to the authority of others (ibid.). What others believe cannot but influence what we ourselves believe, not least of all because their contrary beliefs have the capacity to generate genuine doubt; such is the potential strength of the social impulse in human beings (CP 5.378). Accordingly, we need a communal way of fixing beliefs. The method of authority provides just this. This method consists in instituting an authority with the power to establish – and enforce – what everyone within the jurisdiction of this authority must believe. But this method, too, cannot sustain itself in practice; for in the most priest-ridden or police-controlled states (CP 5.381; also W 3:251), there will always be some persons who, prompted (again) by the social impulse instinctive to human beings, cannot help supposing that the differing beliefs of those from different cultures or ages may, in principle, be true (i.e., worthy of espousal). A finite, fixed authority is insufficiently communal; nothing less than an infinite, evolving community can offer the epistemic authority needed to fix beliefs, at least for social beings such as human inquirers always are.

In contesting the brutality of external authority, it seems natural to turn toward the deliverances of an internal authority with which rational inquirers are inclined to identify themselves (e.g., the *cogito*). To accept these deliverances entails no violation of one’s nature; much rather, it means accepting whatever proves to be agreeable to

one's own reason, i.e., one's own innermost self. Whereas the institutional authority of the Catholic Church during the Middle Ages provided Peirce with his paradigm of the method of authority, he saw in Descartes' appeal to the apodictic certainties of his own individual rationality a historical example of this third method (the *a priori* method). But, "what if our *internal* authority should meet the same fate, in the history of opinions, as that external authority has met?" (CP 5.215). Peirce was convinced that, in his own day, the signs of individual consciousness having suffered this fate were discernible (CP 5.383). For it "makes of inquiry something similar to the development of taste; but taste . . . is always more or less a matter of fashion" (ibid.). Hence, rather than eliminating the "accidental and capricious element" in the process of fixing beliefs, it has enthroned this element as sovereign. In this and other respects, the method of apriority "does not differ in a very essential way from that of authority" (CP 5.383).

In order for us as embodied, social agents to overcome doubt, we need a communal method grounded in the hypothesis that there are real things to which experiential appeals can be made in the ongoing course of genuine investigation. "Such is the method of science" (CP 5.384). "This is the only one of the four methods which presents any distinction of a right and a wrong way" (CP 5.385). This distinction is, for example, collapsed by the method of authority, since the dicta of instituted authority are, by definition, true: there can, in principle, be no distinction between what it dictates and what is so. This implies that self-criticism and, thus, self-correction are precluded. To institute a communal method for fixing beliefs committed to the realistic hypothesis means, in contrast, that even the most securely established beliefs of any finite community at any actual stage of its ongoing history are open to revision: what the members of such a community hold and what reality holds can never be identified, except provisionally. The possibility of detecting and correcting errors requires the hypothesis that the properties of things may, in principle, be other than those ascribed to them by us. We require a general method within which it is always apposite to distinguish between our specific strategies of inquiry and the most reliable procedures (between "a right and a wrong way" or between our way and a better one). The method of science alone secures this distinction.

### Clarifying Meaning

In connection with his doubt-belief theory of inquiry, Peirce formulated a heuristic maxim designed to help scientific inquirers clarify the meaning of certain ideas pivotal to objective inquiry. He stressed: "I understand pragmatism to be a method of ascertaining the meanings, not of all ideas, but only of what I call 'intellectual concepts,' such concepts being "those upon the structure of which, arguments concerning objective fact may hinge" (CP 5.467). He took his pragmatism to be neither a theory of truth nor even a theory of meaning (for his account of meaning, the student of Peirce must look to his general theory of signs and, in particular, his extensive discussions of the interpretants of signs), but only a maxim by which inquirers can become clearer about the meanings of the terms used in their endeavors to discover truths pertaining to facts and especially laws. He stressed it has nothing to do with the qualities of

feelings except insofar as these are indicative of the properties of things; in other words, it has nothing to do with feelings in themselves but only as signs, as subjective determinations bearing upon objective affairs. The *hardness* of an object can of course be felt, but the meaning of this predicate concerns not the qualitative immediacy of feeling but its implied bearing on conduct. It concerns how objects under this description *would act* on things other than themselves. What is true of predicates like hardness here is true of all other “intellectual concepts”: they “essentially carry some implication concerning the general behavior either of some conscious being or of some inanimate object, and so convey more, not merely than any feeling, but more too, than, any existential fact, namely, the ‘would-acts,’ ‘would-dos’ of habitual behavior” (CP 5.467). To say that an object is *hard* is, thus, to imply something about how it would act; what we mean by this term is, at least in context of inquiry, inseparable from such implications. Peirce went so far as to assert that, according to his pragmatism, “the *total* meaning of the predication of an intellectual concept is contained in the affirmation that, under all conceivable circumstances of a given kind . . . the subject of the predication would behave in a certain general way” (CP 5.467).

*The First Grade of Clearness: tacit familiarity*

In order to make our ideas clear, some kind of translation of signs is necessary (CP 5.427). But this presupposes an intimate familiarity with signs derived from our ability to utter and interpret them effectively in countless situations. At the most rudimentary level, for example, we might know how properly to use the term *real*, without being able to define it abstractly. This minimal level of semiotic competency is of no trifling importance; all higher levels presuppose the tacit familiarity of human agents with countless types of sign-use.

*The Second Grade of Clearness: abstract definition*

For the sake of clarity, however, it is often helpful to translate this tacit familiarity into an explicit definition, often of an abstract character. Returning to our example, by probing the difference between the *real* and the *fictive*, we may (following Peirce himself) arrive at this definition: the *real* is that whose status and properties are independent of what anybody may take them to be, sufficiently independent to secure the possibility of anybody being mistaken.

*The Third Grade of Clearness: pragmatic clarification*

But “we must be on our guard against the deceptions of abstract definitions” (CP 7.362). More generally, Peirce thought that the conceptual clarification achieved by means of abstract definitions was inadequate for the purposes of experimental inquiry. Simply translating a concept into other concepts is insufficient; ultimately translating concepts into habits of conduct is requisite. Such is the main import of Peirce’s pragmatic maxim: “Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object” (CP 5.402). The pragmatic clarification of *reality* pushes beyond the abstract definition of this term, by identifying the effects

implied in ascribing this property to anything. "The only effect which real things have is to cause belief" (CP 5.406; also W 3:271) or to contribute to the formation of belief principally by the capacity of reality to generate doubt (to challenge presently fixed belief) and to provide the means for overcoming doubt (to fix provisionally superior beliefs).

Doubt, inquiry conceived as the struggle to overcome doubt, and the recovery of belief as the immanent goal of any genuine inquiry, are the marks by which inquirers experientially know and pragmatically define the *real*. The real is that to which the community of inquirers would be led by the course of experience, if only this experience were of sufficient duration and these inquirers were truly animated by a love of truth and, hence, effectively oriented by the results of self-criticism. The "very origin of the conception of reality shows that this conception essentially involves the notion of a COMMUNITY, without definite limits, and capable of a definite increase in knowledge" (CP 5.311; also W 2:239; cf. CP 5.354, 2.645). The conceivable practical effects implied in the predicate "real" are ones pertaining directly to belief, doubt, and inquiry.

In this connection, *practical* is thus not to be understood in any narrow sense, especially one set in sharp contrast to *theoretical*. Peirce did not subordinate theory to practice but rather insisted upon seeing theory itself as a mode of practice quite distinct from other modes. The "practical" bearings to which his pragmatic maxim refers are, thus, ones pertaining to the conduct of inquirers qua inquirers. In a letter to the British pragmatist F. C. S. Schiller, Peirce is explicit about how he understood the term *practical*: By it, "I mean apt to affect conduct; and by conduct, voluntary action that is self-controlled, i.e., controlled by adequate deliberation" (CP 8.322). Those effects having "conceivable practical bearings" are, hence, ones apt to affect the comportment of theoretical inquirers in this distinctive role.

## The Theory of Signs

Peirce identified himself as a logician more often than as a physicist; and his conception of logic encompassed a general theory of signs, in order to offer an adequate account of inquiry. He was convinced that "the woof and warp of all thought and all research is symbols, and the life of thought and science is the life inherent in symbols" (CP 2.220). Three convictions especially guided Peirce's investigation of signs. First, he was convinced that "thinking always proceeds in the form of a dialogue" (CP 4.6), ordinarily between different phases of the ego (e.g., the critical self of a later moment calling into question the supposition guiding the conjectural self of just a moment before). Signs are thus the indispensable media of not only interpersonal but also reflexive communication: they are instruments as much of thought as of conversation, since thought itself is, as Plato noted, an inner conversation or "a silent speech of the soul with itself" (W 2:172). If this dialogical conception of thinking is accepted, "immense consequences follow" (EP 2:172). Peirce devoted care to tracing out these consequences of this position, one he identified as tuism (the "doctrine that all thought is addressed to a second person, or to one's future self as to a second person" (W 1:xxix)). His theory of science no less than his account of the self reveals as much.

Second, he was convinced that thought could not be severed from its modes of expression. Of course, a thought expressed in one way almost always can be expressed in other ways, though not infrequently this results in a depletion or distortion of meaning. But Peirce rejected the supposition that thought is something apart from its possibility of expression or articulation. The particular signs used on any actual occasion are not themselves the thought; at least they cannot be unqualifiedly identified with the thought being expressed: "Oh, no; no whit more than the skins of an onion are the onion. (And about as much so, however.)" It was evident to Peirce that: "One selfsame thought may be carried upon the vehicle of English, German, Greek, or Gaelic; in diagrams, or in equations, or in graphs: all these are but so many skins of the onion, its inessential accidents" (CP 4.6). No less manifest was that anything properly designated as "thought should have some possible expression for *some* possible interpreter." He took this possibility to be "the very being of its being" (CP 4.6). Hence, he insisted, "all that we know of thought is but a reflection on what we know of its expression" (CP 2.466 n.1). The logician in the narrow sense of a critic of the forms of reasoning, hence, must be a logician in the broader or semiotic sense of a student of signs in general (including of course linguistic signs).

Third, Peirce was convinced that at least "every symbol is a living thing, in a very strict sense that is no mere figure of speech" (CP 2.222). Neither consciousness nor mind endows signs with life; rather, the actions of signs are themselves signs of vitality, however rudimentary. Peirce was aware that such a claim is likely to strike many people as "stark madness, or mysticism, or something equally devoid of reason and good sense" (MS 290, 58). But he supposed a blindness rooted in something close to perversity prompted such a judgment (see, e.g., CP 1.349). The "great truth of the immanent power" of living signs was one championed by Peirce.

The signs with which we are most directly and intimately familiar are ones closely associated with consciousness or, at least, mind (Peirce emphatically refused to identify mind with consciousness, since he was convinced that most of our mental processes are unconscious). This inclines us to suppose that there is an essential connection between semiosis and mind: the interpretive acts of a mental agent or mindful being are often supposed by us to constitute the sole source of significance. Apart from these acts, allegedly nothing would count as a sign. To Ludwig Wittgenstein's question ("Every sign *by itself* seems dead. What gives it life?"), the answer appears to be some interpreter; and mind is that which equips any being with the capacity to fulfill this function. Peirce was, however, opposed to this mentalist account of signs, putting forth alternatively a semiotic account of mind. Mind is here not so much a principle of explanation as a phenomenon calling for explanation. There is hardly any question that the human mind is (in Susanne Langer's telling expression) symbolific; this mind is adapted not only to acquire diverse modes of symbolization but also to craft new symbols from its inheritance. We are symbol-making as well as sign-using animals. The key to mind is the use of signs, whereas that to the distinctive character of the human mind is the capacity to use inherited signs in innovative ways and, more dramatically, to fashion novel signs. An indication of this is the role of metaphor in our use of language. Rather than tracing signs to their alleged origin in mind, Peirce explained mind by its manifest reliance on signs.

Peirce's definition of semiosis (or sign-action) is at the center of his theory of signs. Semiosis is a paradigm of his category of thirdness, for it involves an irreducibly triadic relationship. So too is an act of giving. In such an act, a giver, gift, and recipient are essentially related to another one: divestiture (the giver relinquishes possession of an object) and acquisition (the recipient acquires possession of this same object) are, in giving, not accidentally related, but rather bound together in a single act. In semiosis, an *object*, *sign*, and *interpretant* are likewise bound together in a single process, though not necessarily by the intention of any agent. If a person knocks on a door, the sound generated by this action is a sign of someone being there (or one soliciting the recognition of anyone on the other side). The knocker is the object, whereas the response to the sound would be the interpretant. But semiosis is, in principle, an open-ended process, for the interpretant very frequently serves as a sign generating yet another interpretant. The *immediate* object of semiosis is the way the object is represented by a sign or series of signs, whereas the *dynamical* object is whatever has determined or, at least, the capacity to determine, a sign or series of signs. The dynamic object is that which has the capacity to constrain a process of representation and, thus, to enable the recognition of misinterpretation. It is the object as potentially other than its representation.

Peirce's categories guided his investigation of signs. This is evident in his various classifications of interpretants and also his elaborate classifications of signs, virtually all of which are explicitly based upon categoreal considerations. His two most important classifications of interpretants clearly indicate this. In one, emotional, energetic, and logical interpretants are distinguished from one another. Some signs generate feelings and have no other interpretants than the emotions they generate. Other signs generate actions (e.g., the action of soldiers in response to the command "Ground arms!" issued by the officer of their troop). The actions themselves are the energetic interpretants of the sign. Still other signs are not only inherently general but also (by virtue of their generality) play a crucial role in some rational process (e.g., experimental inquiry or political deliberation). Concepts would be examples of such logical interpretants. But so too would habits. In fact, Peirce holds that only habits can serve as the ultimate logical interpretants of signs, a claim central to his reformulation of pragmatism. In another important classification of interpretants, immediate, dynamic, and final are distinguished from one another. First, there must be something inherent in any sign that renders it interpretable in a determinative way, such that something would count as a misinterpretation. The immediate interpretant of any sign is, then, its grounded interpretability; it signifies a possibility, but not an utterly abstract one. Second, there is often some actual effect generated by the action of a sign. The dynamic interpretant is any effect actually produced by a sign as such. Finally, there is the final interpretant, "the effect that would be produced on the mind by the Sign after sufficient development of thought" (*EP* 2:482). The relationship between these two classifications of interpretants is but one thorny question confronting anyone who is seriously interested in exploring the details of Peirce's semeiotic.

Peirce also offered elaborate classifications of signs based upon the application of his categories to this field of inquiry. Let us briefly consider one of these, involving three trichotomies. First, a sign considered in itself, apart from either its object or interpretant (i.e., a sign as a first) is either a quality or event or law. This yields the trichotomy of

*qualisign* (a quality serving as a sign), *sinsign*, and *legisign*. Second, a sign considered in relation to its dynamical object yields Peirce's most famous trichotomy of signs – that of *icon*, *index*, and *symbol*. In an icon, a sign is related to its dynamical object by virtue of some inherent similarity the sign bears to its object. A photograph of you signifies you (partly) by virtue of such a similarity. In an index, a sign is related to its dynamical object by virtue of a causal connection between the sign and its object. The weathervane signifies the direction of the wind by virtue of its object causing it to point in this direction. Hence, it is an indexical sign. But, in a certain respect, so too is a photograph, for the photographic image of anything signifies that thing by virtue of a causal connection between itself and its object. This suggests that it is best to conceive of icon, index, and symbol not as separable signs but as potentially interwoven sign functions. In a symbol, a sign is related to its dynamic object by virtue of a habitual connection, either naturally or conventionally established. A commonplace misunderstanding of the Peircean conception of symbol is to suppose that, for him, a symbol is based on a conventional relationship between symbol and symbolized. But the disposition of bees to interpret the dance of other members of their species as indicative of the direction and distance of honey would be an example of a symbol based on a habitual connection of a natural (rather than conventional) character. In this example, it is perhaps possible to discern symbolic, indexical, and even iconic functions interwoven in such a way as to produce a remarkably effective instance of semiosis. In the instances of semiosis of greatest interest to Peirce, the mutually supportive operations of iconic, indexical, and symbolic signs were paramount. Third, a sign may be considered in relationship to its interpretant. Such consideration would yield the trichotomy of what (leaving aside Peirce's for bidding terminology in this case) roughly corresponds to concepts, propositions, and arguments.

### Absolute Chance, Brute Reaction, and Evolving Law

Peirce's normative account of objective inquiry, doctrine of categories, and theory of signs are among his most important contributions to philosophical investigation. His guess at the riddle of the universe is arguably of less importance, perhaps even of dubious merit. At the center of Peirce's cosmology are, at least, three claims. The first concerns chance, the second actuality, and the third the evolution of laws. These three claims are intimately connected to one another. First, there is Peirce's doctrine of *tychism* (derived from the Greek word for chance). The cosmos is such by virtue of an evolution out of chaos. The possibility of such an evolution presupposes the objectivity of chance. Chance is not solely a function of our ignorance, such that if we knew fully enough the laws operating in nature we would be able to predict virtually every natural event; rather, it is a feature of reality. The natural world is a scene of chance occurrences: randomness is real. Second, brute actuality plays as important a role in the constitution of the universe as does objective chance. Third, the supposition of immutable laws seems to be in contradiction to the evolution of the cosmos itself. For Peirce, "philosophy requires thorough-going evolutionism or none" (CP 6.14). This means that we need to take seriously the hypothesis that the laws of nature have themselves evolved: "To suppose universal laws of nature capable of being

apprehended by the mind and yet having no reason for their special forms, but standing inexplicable and irrational, is hardly a justified position" (CP 6.12). The laws by which we explain some phenomena are themselves phenomena and, as such, call for explanation. The only way of explaining them involves supposing a process by which they were generated; and the only condition allowing for such a process is an original condition of absolute chance virtually indistinguishable from complete nullity.

Interwoven with Peirce's evolutionary cosmology are a number of distinctive views, three of which especially merit mention here. First, there is his doctrine of evolutionary love (CP 6.287–317). The pragmatist "does not make the *summum bonum* to consist in action," but in that process of evolution whereby existents come to embody more fully generals that are themselves becoming more harmoniously integrated (CP 5.433). "In its higher stages, evolution takes place more and more largely through self-control" (ibid.); and the deliberate cultivation of self-control ultimately involves an uncompromising commitment to concrete reasonableness, involving the surrender of our finite selves to an infinite ideal (CP 5.356–7, 8.262). Peirce identified this with *agape*. The higher stages in the growth of concrete reasonableness require nothing less.

Second, habits, laws, and what Peirce calls generals are no less real than existents, actualities, and individuals. Strictly speaking, they are alone real, while existents are actual. In opposition to the nominalist, for whom only individuals are real, Peirce argued for scholastic realism, contending that an adequate account of science requires a robust affirmation of generals (principally the irreducibly general laws pervading nature). Third, this affirmation is part of his insistence on there being three modes of being (see, e.g., CP 1.21–3, 1.515, 8.305) – possibility, actuality, and reality (what might be called habituality, since the would-do of habits is the exemplar of this mode of being). Peirce's metaphysics includes an ontology as well as cosmology, an explication of the senses of being as well as a conjecture regarding the constitution of the universe. In addition to actuality or existence (the mode of being characteristic of individuals), there is that of might-be and would-be. The actual universe disclosed in our everyday experience is inexplicable on egoistic, nominalistic, and other often highly fashionable yet severely reductivist assumptions. Thus, alternative hypotheses must be seriously considered. This is nowhere more manifest than in Peirce's metaphysics.

## References and further reading

### Works by Peirce

- 1931–58: *Collected Papers of Charles Sanders Peirce*, 8 vols., ed. Charles Hartshorne, Paul Weiss, and Arthur Burks. Cambridge, MA: Harvard University Press.
- 1975–87: *Charles Sanders Peirce: Contributions to the Nation*, 4 vols., ed. Kenneth L. Ketner and James E. Cook. Lubbock: Texas Tech University Press.
- 1976: *The New Elements of Mathematics*, 5 vols., ed. Carolyn Eisele. The Hague: Mouton; Atlantic Highlands, NJ: Humanities Press.
- 1982–99: *Writings of Charles S. Peirce: A Chronological Edition*, 6 vols. to date, ed. Max H. Fisch, Edward Moore, Nathan Houser, et al. Bloomington: Indiana University Press.
- 1991–8: *The Essential Peirce*, 2 vols., ed. Peirce Edition Project. Bloomington: Indiana University Press.



1992: *Reasoning and the Logic of Things: The Cambridge Conference Lectures of 1898*, ed. Kenneth L. Ketner and Hilary Putnam. Cambridge, MA: Harvard University Press.

### Works by other authors

- Anderson, Douglas R. 1995. *Strands of System: The Philosophy of Charles S. Peirce*. West Lafayette, IN: Purdue University Press.
- Apel, Karl-Otto. 1981. *Charles S. Peirce: From Pragmatism to Pragmaticism*. Amherst, MA: University of Massachusetts Press.
- Brent, Joseph. 1998. *Charles Sanders Peirce: A Life*, 2nd edn. Bloomington: Indiana University Press.
- Chiasson, Phyllis. 2001. *Peirce's Pragmatism: The Design for Thinking*. Amsterdam: Rodopi.
- Colapietro, Vincent M. 1989. *Peirce's Approach to the Self*. Albany: State University of New York Press.
- Colapietro, Vincent M. 1996. "Peirce the concrete fallibilist, convinced pragmaticist, and critical commonsensist." *Semiotica* 111, 75–101.
- Delaney, C. F. 1993. *Science, Knowledge, and Mind: A Study in the Philosophy of C. S. Peirce*. Notre Dame, IN: University of Notre Dame Press.
- Deledalle, Gérard. 2000. *Charles S. Peirce's Philosophy of Signs*. Bloomington: Indiana University Press.
- De Waal, Cornelis. 2001. *On Peirce*. Belmont, CA: Wadsworth/Thomson Learning.
- Fisch, Max H. 1986. *Peirce, Semeiotic, and Pragmatism: Essays by Max H. Fisch*, ed. Kenneth Ketner and Christian Kloesel. Bloomington: Indiana University Press.
- Hausman, Carl R. 1993. *Charles S. Peirce's Evolutionary Philosophy*. Cambridge: Cambridge University Press.
- Hookway, Christopher. 1985. *Peirce*. London and New York: Routledge.
- Kent, Beverley. 1987. *Charles S. Peirce: Logic and the Classification of the Sciences*. Kingston and Montréal: McGill-Queen's University Press.
- Liszka, James Jakób. 1996. *A General Introduction to the Semeiotic of Charles Sanders Peirce*. Bloomington: Indiana University Press.
- Misak, C. J. 1991. *Truth and the End of Inquiry: A Peircean Account of Truth*. Oxford: Clarendon Press.
- Misak, C. J., ed. 2004. *The Cambridge Companion to Peirce*. Cambridge: Cambridge University Press.
- Murphey, Murray G. 1993. *The Development of Peirce's Philosophy*. Indianapolis: Hackett.
- Parker, Kelly A. 1998. *The Continuity of Peirce's Thought*. Nashville, TN: Vanderbilt University Press.
- Perry, Ralph B. 1935. *The Thought and Character of William James*. Boston: Little, Brown and Co.
- Rosenthal, Sandra B. 1994. *Charles Peirce's Pragmatic Pluralism*. Albany: State University of New York Press.